

1 **Section 2-1600 TR-2 (Transitional Residential - 2)**

2 **2-1601 Purpose and Intent.** The purpose and intent of the TR-2 district is to:

- 3 (A) Create a visual/spatial transition between the suburban area and the rural area of
4 the County;
- 5 (B) Achieve a blend of rural and suburban development;
- 6 (C) Encourage new development designs that incorporate both suburban and rural
7 features;
- 8 (D) Achieve a balance between the built and natural environment;
- 9 (E) Protect and integrate open space and natural resources; and
- 10 (F) Implement requirements that open space be provided in conjunction with
11 ~~conservation design and other~~ the standards of this Ordinance.

12

13 **2-1602 Use Regulations.** Table 2-1602 summarizes the principal use regulations of the TR-2
14 district.

15 (A) **Organization of Use Table.** Table 2-1602 organizes the uses in the TR-2 district
16 by Use Classifications, Use Categories and Use Types.

17 (1) **Use Classifications.** The Use Classifications are: residential uses;
18 agricultural uses; public and institutional uses; commercial uses; and
19 industrial uses. The Use Classifications provide a systematic basis for
20 assigning present and future land uses into broad general classifications
21 (e.g., residential uses and agricultural uses). The Use Classifications then
22 organize land uses and activities into general "Use Categories" and
23 specific "Use Types" based on common functional, product, or physical
24 characteristics, such as the type and amount of activity, the type of
25 customers or residents, how goods or services are sold or delivered, and
26 site conditions.

27 (2) **Use Categories.** The Use Categories describe the major sub-groups of the
28 Use Classification, based on common characteristics (e.g., the residential
29 Use Classification is divided into two major Use Categories: Household
30 Living and Group Living). Principal uses are identified in defining the Use
31 Category. They are principal uses that most closely share the common
32 characteristics that are key to the Use Category.

33 (3) **Use Types.** The Use Categories are then divided into specific Use Types.
34 The specific Use Types are included in the respective Use Category. They

1 identify the specific uses that are considered to fall within characteristics
2 identified in the Use Category. For example, single family detached
3 dwellings, multi-family dwellings and town houses are Use Types in the
4 Household Living Use Category.

5 (B) **Use Categories and Use Types Defined.** All the Use Categories and Use Types
6 listed in Table 2-1602 are defined in Article VIII (Definitions).

7 (C) **Permitted and Special Exception Uses.** A "P" in the column identified "TR-2"
8 indicates that a Use Category or specific Use Type is permitted as a matter of
9 right (as a permitted use) in the TR-2 district, subject to compliance with all
10 applicable standards and regulations in this Ordinance and all other county
11 ordinances. An "S" indicates that a Use Type is allowed in the TR-2 district as a
12 special exception in accordance with the procedures and standards of Section 6-
13 1300. In some instances and based on the Additional Regulations for Specific
14 Uses (Section 5-600), a Use Type will be permitted under certain conditions
15 (allowed as a permitted use), or allowed as a special exception under other
16 conditions. In those instances, it is identified as "P/S."

17 (D) **Reference to General Use Category.** References to "General Use Category"
18 under the Use Type column, means all of the uses in the Use Category are
19 allowed. The Use Categories are defined in Article VIII. Where specific Use
20 Types are listed in the Use Type column, only the listed Use Types in the Use
21 Category are allowed. The Use Types are defined in Article VIII.

22 **Additional Regulations for Specific Uses.** References to sections in the final column of Table
23 2-1602 (Additional Regulations for Specific Uses) indicate that the listed use is subject to use-
24 specific regulations. The numbers provide a cross-reference to the "Additional Regulations for
25 Specific Uses" in Section 5-600. All the Use Categories and Use Types listed in Table 2-1602
26 are defined in Article VIII (Definitions).
27

**TABLE 2-1602
TR-2 TRANSITIONAL RESIDENTIAL-2 DISTRICT USE TABLE**

P = PERMITTED S = SPECIAL EXCEPTION

USE CATEGORY	USE TYPE	TR-2	ADDITIONAL REGULATIONS FOR SPECIFIC USES
RESIDENTIAL USES			
Household Living	Accessory dwelling (accessory to single family detached dwelling)	P	Section 5-613
	Dwelling, single-family detached, including manufactured housing	P	Manufactured housing subject to Section 5-620.
	Home occupation (accessory to single family detached dwelling)	P	Section 5-400
	Portable Dwelling/ Construction Trailer	P	
	Guest house (accessory to single family detached dwelling)	P	Section 5-612
Group Living	Congregate housing facility	S	
	Continuing care facility	S	
	Orphanage or similar institution	S	
	Monastery or convent	S	Section 5-656
	Tenant dwelling	P/S	Section 5-602
AGRICULTURAL USES			
Agriculture	General Use Category	P	Section 5-626
Horticulture	General Use Category	P	Section 5-626

**TABLE 2-1602
TR-2 TRANSITIONAL RESIDENTIAL-2 DISTRICT USE TABLE**

P = PERMITTED S = SPECIAL EXCEPTION

USE CATEGORY	USE TYPE	TR-2	ADDITIONAL REGULATIONS FOR SPECIFIC USES
Animal Husbandry	General Use Category	P	Section 5-626
Agriculture Support and Services Directly Related to On-going Agriculture, Horticulture and Animal Husbandry Activity, On-Site	Animal care business	P	Section 5-627
	Custom operators	P	Section 5-627
	Direct market business for sale of products produced on-site including but not limited to PYO (pick-your-own)	P	Section 5-627
	Equestrian facilities	P	Section 5-627
	Equestrian facility, on lots of less than fifty (50) acres, or without frontage on a state maintained road	S	Section 5-627
	Farm co-ops	P	Section 5-627
	Farm based tourism events	P	Section 5-628
	Farm markets	P	Section 5-603
	Pet farms	P	Section 5-627
	Stables	P	Section 5-627
	Stable, neighborhood on lots less than twenty five (25) acres, or without frontage on a state maintained road	S	Section 5-627
	Wayside stand	P	Section 5-604
Animal Services	Veterinary service	P	
PUBLIC AND INSTITUTIONAL USES			
Day Care Facilities	Child care home	P	Section 5-609(A)
	Child or adult day care	S	Section 5-609(B)
Cultural and Governmental	Community center, HOA facilities only	P	

TABLE 2-1602 TR-2 TRANSITIONAL RESIDENTIAL-2 DISTRICT USE TABLE P = PERMITTED S = SPECIAL EXCEPTION			
USE CATEGORY	USE TYPE	TR-2	ADDITIONAL REGULATIONS FOR SPECIFIC USES
Facilities	Structures or uses for local government purposes not otherwise listed	S	
Education	Colleges or Universities (including dorms)	S	
	School (elementary or middle), for fifteen (15) pupils or less	P	Section 5-655
	School (elementary, middle, or high), for more than 15 pupils	S	
	Seminary	S	
	Vocational school	S	
Park and Open Space	Cemetery	S	Section 5-637
	Mausoleum	S	Section 5-637
	Community, neighborhood, or regional park, passive recreational uses	P	
	Community, neighborhood, or regional park, active recreational uses	S	
	Wetlands mitigation bank	P	
Public Safety	Fire and/or rescue station	S	Section 5-638
	Police station or substation	S	Section 5-638
Religious Assembly	Church, synagogue, temple or mosque with seating capacity of 300 or less seats in sanctuary or main activity area	P	Section 5-639
	Church, synagogue, temple, or mosque with seating capacity of more than 300 in sanctuary or main activity area, or with accessory schools, day care centers, with more than 50 children, recreational facilities	S	Section 5-639
Utility	Communal sewer system	P	Section 5-621

TABLE 2-1602
TR-2 TRANSITIONAL RESIDENTIAL-2 DISTRICT USE TABLE

P = PERMITTED S = SPECIAL EXCEPTION

USE CATEGORY	USE TYPE	TR-2	ADDITIONAL REGULATIONS FOR SPECIFIC USES
	Communal water supply system	P	Section 5-621
	Public utility service center and storage yard	S	Section 5-621
	Public utility service center, without outdoor storage	P	Section 5-621
	Recycling drop off collection center, public	P	Section 5-607
	Recycling drop off collection center, private	S	Section 5-607
	Sewage and water treatment plant	S	Section 5-621
	Utility substation, dedicated	S	Section 5-621
	Utility substation, distribution	S	Section 5-616 and 5-621
	Utility substation, transmission	S	Section 5-616 and 5-621
	Utility transmission line, overhead (excluding connections of lines from public utility transmission lines to individual development sites)	S	Unless exempted by Section 1-103 (D)
	Utility transmission line, underground	P	
	Water storage tank	S	Section 5-621
	Sewage and water pumping station	P	Section 5-621
COMMERCIAL USES			
Recreation and Entertainment	Golf course	S	Section 5-648
	Private club or lodge	S	
Retail Sales and Service	Small business	P/S	Section 5-614
Visitor Accommodation	Bed and breakfast homestay	P/S	Section 5-601(A)
	Bed and breakfast inn	S	Section 5-601(B)

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TABLE 2-1602 TR-2 TRANSITIONAL RESIDENTIAL-2 DISTRICT USE TABLE			
P = PERMITTED S = SPECIAL EXCEPTION			
USE CATEGORY	USE TYPE	TR-2	ADDITIONAL REGULATIONS FOR SPECIFIC USES
INDUSTRIAL USES			
Telecommunication Facilities	Radio and/or television tower	S	Section 5-618
	Telecommunications antenna	P	Section 5-618(A)
	Telecommunications monopole	P	Section 5-618(B)(1)
	Telecommunications monopole	S	Section 5-618(B)(2)
	Telecommunication tower	S	Section 5-618(C)(2)

2-1603 Development Standards.

- (A) **General.** All development in the TR-2 district, unless exempted pursuant to Section 2-1603 (B) shall be developed consistent with Section 5-701 (TR Districts Lot Standards) and 6-2000 (Conservation Design).
- (B) **Exemptions.** The development of a lot existing on the date of adoption is exempted from the standards and requirements of Section 5-701 (TR Districts Lot Standards). The development of such lot shall be subject to the development standards of Table 2-1603(B).

TABLE 2-1603(B): TR-2 BUILDING REQUIREMENTS FOR EXISTING LOTS (Lots Existing Prior to January 7, 2003)	
Minimum Required Yards	No building shall be located within 25 feet of any property line nor within 100 feet from the right-of-way of any arterial road, 75 feet from the right-of-way of any collector road, and 35 feet from any other road right-of-way, private access easement, and any prescriptive easement.
Maximum Floor Area Ratio	0.05
Maximum Building Height	35 feet. No restriction for buildings used exclusively for agriculture, horticulture and animal husbandry.

1 **Section 2-1700 TR-1 (Transitional Residential - 1)**

2 **2-1701 Purpose and Intent.**

3 (A) The purpose and intent of the TR-1 districts is to:

- 4 (1) Create a visual/spatial transition between the suburban area and the rural
5 area of the County;
- 6 (2) Achieve a blend of rural and suburban development;
- 7 (3) Encourage new development designs that incorporate both suburban and
8 rural features;
- 9 (4) Achieve a balance between the built and natural environment;
- 10 (5) Protect and integrate open space and natural resources; and
- 11 (6) Implement requirements that open space be provided in conjunction with
12 ~~the conservation design and other~~ standards of this Ordinance.

13 **2-1702 Use Regulations.** Table 2-1702 summarizes the principal use regulations of the TR-1
14 districts.

15 (A) **Organization of Use Table.** Table 2-1702 organizes the uses in the TR-1
16 districts by Use Classifications, Use Categories and Use Types.

17 (1) **Use Classifications.** The Use Classifications are: residential uses;
18 agricultural uses; public and institutional uses; commercial uses; and
19 industrial uses. The Use Classifications provide a systematic basis for
20 assigning present and future land uses into broad general classifications
21 (e.g., residential uses and agricultural uses). The Use Classifications then
22 organize land uses and activities into general "Use Categories" and
23 specific "Use Types" based on common functional, product, or physical
24 characteristics, such as the type and amount of activity, the type of
25 customers or residents, how goods or services are sold or delivered, and
26 site conditions.

27 (2) **Use Categories.** The Use Categories describe the major sub-groups of the
28 Use Classification, based on common characteristics (e.g., the residential
29 Use Classification is divided into two major Use Categories: Household
30 Living and Group Living). Principal uses are identified in defining the Use
31 Category. They are principal uses that most closely share the common
32 characteristics that are key to the Use Category.

1 (3) **Use Types.** The Use Categories are then divided into specific Use Types.
2 The specific Use Types are included in the respective Use Category. They
3 identify the specific uses that are considered to fall within characteristics
4 identified in the Use Category. For example, single family detached
5 dwellings, multi-family dwellings and town houses are Use Types in the
6 Household Living Use Category.

7 (B) **Use Categories and Use Types Defined.** All the Use Categories and Use Types
8 listed in Table 2-1702 are defined in Article VIII (Definitions).

9 (C) **Permitted and Special Exception Uses.** A "P" in the column identified "TR-1"
10 indicates that a Use Category or specific Use Type is permitted as a matter of
11 right (as a permitted use) in the TR-1 districts, subject to compliance with all
12 applicable standards and regulations in this Ordinance and all other county
13 ordinances. An "S" indicates that a Use Type is allowed in the TR-1 districts as a
14 special exception in accordance with the procedures and standards of Section 6-
15 1300. In some instances and based on the Additional Regulations for Specific
16 Uses (Section 5-600), a Use Type will be permitted as a matter of right under
17 certain conditions or allowed as a special exception under other conditions. In
18 those instances, it is identified as "P/S."

19 (D) **Reference to General Use Category.** References to "General Use Category"
20 under the Use Type column, means all of the uses in the Use Category are
21 allowed. The Use Categories are defined in Article VIII. Where specific Use
22 Types are listed in the Use Type column, only the listed Use Types in the Use
23 Category are allowed. The Use Types are defined in Article VIII.

24 (E) **Additional Regulations for Specific Uses.** References to sections in the final
25 column of Table 2-1702 (Additional Regulations for Specific Uses) indicate that
26 the listed use is subject to use-specific regulations. The numbers provide a cross-
27 reference to the "Additional Regulations for Specific Uses" in Section 5-600. All
28 the Use Categories and Use Types listed in Table 2-1702 are defined in Article
29 VIII (Definitions).

**TABLE 2-1702
TR-1 TRANSITIONAL RESIDENTIAL-1 DISTRICTS USE TABLE**

P = PERMITTED S = SPECIAL EXCEPTION

USE CATEGORY	USE TYPE	TR-1 UBF	TR-1 LF	ADDITIONAL REGULATIONS FOR SPECIFIC USES
RESIDENTIAL USES				
Household Living	Accessory dwelling (accessory to single family detached dwelling)	P	P	Section 5-613
	Dwelling, single-family detached, including manufactured housing	P	P	Manufactured housing subject to Section 5-620.
	Home occupation (accessory to single family detached dwelling)	P	P	Section 5-400
	Portable Dwelling/ Construction Trailer	P	P	
	Guest house (accessory to single family detached dwelling)	P	P	Section 5-612
Group Living	Congregate housing facility	S	S	
	Continuing care facility	S	S	
	Orphanage or similar institution	S	S	
	Monastery or convent	S	S	Section 5-656
	Tenant dwelling	P/S	P/S	Section 5-602
AGRICULTURAL USES				
Agriculture	General Use Category	P	P	Section 5-626
Horticulture	General Use Category	P	P	Section 5-626
Animal Husbandry	General Use Category	P	P	Section 5-626

**TABLE 2-1702
TR-1 TRANSITIONAL RESIDENTIAL-1 DISTRICTS USE TABLE**

P = PERMITTED S = SPECIAL EXCEPTION

USE CATEGORY	USE TYPE	TR-1 UBF	TR-1 LF	ADDITIONAL REGULATIONS FOR SPECIFIC USES
Agriculture Support and Services Directly Related to On-going Agriculture, Horticulture and Animal Husbandry Activity, On-Site	Animal care business	P	P	Section 5-627
	Custom operators	P	P	Section 5-627
	Direct market business for sale of products produced on-site - including but not limited to PYO (pick-your- own)	P	P	Section 5-627
	Equestrian facilities	P	P	Section 5-627
	Equestrian facilities, on lots of less than fifty (50) acres, or without frontage on a state maintained road	S	S	Section 5-627
	Farm co-ops	P	P	Section 5-627
	Farm based tourism	P	P	Section 5-628
	Farm markets	P	P	Section 5-603
	Pet farms	P	P	Section 5-627
	Stables	P	P	Section 5-627
	Stable, neighborhood on lots less than twenty five (25) acres, or without frontage on a state maintained road	S	S	Section 5-627
	Wayside stand	P	P	Section 5-604
Animal Services	Veterinary service	P	P	

TABLE 2-1702
TR-1 TRANSITIONAL RESIDENTIAL-1 DISTRICTS USE TABLE

P = PERMITTED S = SPECIAL EXCEPTION

USE CATEGORY	USE TYPE	TR-1 UBF	TR-1 LF	ADDITIONAL REGULATIONS FOR SPECIFIC USES
PUBLIC AND INSTITUTIONAL USES				
Day Care Facilities	Child care home	P	P	Section 5-609(A)
	Child or adult day care	S	S	Section 5-609(B)
Cultural and Governmental Facilities	Community center, HOA facilities only	P	P	
	Structure or uses for local government purposes not otherwise listed in district	S	S	
Education	Colleges or universities (including dorms)	S	S	
	School (elementary or middle), for fifteen (15) pupils or less	P	P	Section 5-655
	School (elementary, middle, or high), for more than 15 pupils	S	S	
	Seminary	S	S	
	Vocational school	S	S	
Park and Open Space	Cemetery	S	S	Section 5-637
	Mausoleum	S	S	Section 5-637
	Crematorium	S	S	Section 5-637
	Community, neighborhood, or regional park, passive recreational uses	P	P	
	Community, neighborhood, or regional park, active recreational uses	S	S	
	Wetland mitigation bank	P	P	

**TABLE 2-1702
TR-1 TRANSITIONAL RESIDENTIAL-1 DISTRICTS USE TABLE**

P = PERMITTED S = SPECIAL EXCEPTION

USE CATEGORY	USE TYPE	TR-1 UBF	TR-1 LF	ADDITIONAL REGULATIONS FOR SPECIFIC USES
Public Safety	Fire and/or rescue station	S	S	Section 5-638
	Police station or substation	S	S	Section 5-638
Religious Assembly	Church, synagogue, temple or mosque with seating capacity of 300 or less seats in sanctuary or main activity area	P	P	Section 5-639
	Church, synagogue, temple, or mosque with seating capacity of more than 300 in sanctuary or main activity area, or with accessory schools, day care centers with more than 50 children, recreational facilities	S	S	Section 5-639
Utility	Communal sewer system	P		Section 5-621
	Communal water supply system	P		Section 5-621
	Public utility service center and storage yard	S	S	Section 5-621
	Public utility service center, without outdoor storage	P	P	Section 5-621
	Recycling drop off collection center, public	P	P	Section 5-607
	Recycling drop off collection center, private	S	S	Section 5-607
	Sewage and water treatment plant	S	S	Section 5-621
	Utility substation, dedicated	P	P	Section 5-621
	Utility substation, distribution	S	S	Section 5-616 and 5-621
	Utility substation, transmission	S	S	Section 5-616 and 5-621

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TABLE 2-1702 TR-1 TRANSITIONAL RESIDENTIAL-1 DISTRICTS USE TABLE				
P = PERMITTED S = SPECIAL EXCEPTION				
USE CATEGORY	USE TYPE	TR-1 UBF	TR-1 LF	ADDITIONAL REGULATIONS FOR SPECIFIC USES
	Utility transmission line, overhead (excluding connections of lines from public utility transmission lines to individual development sites)	S	S	Unless exempted by Section 1-103(D)
	Utility transmission line, underground	P	P	
	Water storage tank	S	S	Section 5-621
	Water and sewer pumping station	P	P	Section 5-621
COMMERCIAL USES				
Recreation and Entertainment	Golf course	S	S	Section 5-648
	Private club or lodge	S	S	
Retail Sales and Service	Small business	P/S	P/S	Section 5-614
Visitor Accommodation	Bed and breakfast homestay	P/S	P/S	Section 5-601(A)
	Bed and breakfast inn	S	S	Section 5-601(B)
INDUSTRIAL USES				
Telecommunication Facilities	Radio and/or television tower	S	S	Section 5-618
	Telecommunications antenna	P	P	Section 5-618(A)
	Telecommunications monopole	P	P	Section 5-618(B)(1)
	Telecommunications monopole	S	S	Section 5-618(B)(2)
	Telecommunication tower	S	S	Section 5-618(C)(2)

1 **2-1703 Development Standards.**

2 (A) **General.** All development in the TR-1 districts, unless exempted pursuant to
3 Section 2-1703(B) shall be developed consistent with Section 5-701 (TR Districts
4 Lot Standards) and 6-2000 (Conservation Design).

5 (B) **Exemptions.** The development of a lot existing on January 7, 2003 is exempted
6 from the standards and requirements of Section 5-701 (TR Districts Lot
7 Standards). The development of such lot shall be subject to the development
8 standards of Table 2-1703(B).

TABLE 2-1703(B): TR-1 BUILDING REQUIREMENTS FOR EXISTING LOTS (Lots Existing Prior to January 7, 2003)	
Minimum Required Yards	No building shall be located within 25 feet of any property line nor within 100 feet from the right-of-way of any arterial road, 75 feet from the right-of-way of any collector road, and 35 feet from any other road right-of-way, private access easement, and any prescriptive easement.
Maximum Floor Area Ratio	0.05
Maximum Building Height	35 feet. No restriction for buildings used exclusively for agriculture, horticulture and animal husbandry.

1 **Section 4-1900 — Limestone Conglomerate Overlay District (LOD)**

2
3 **4-1901 — Purpose and Intent.** A large area just east of the Catoctin Mountain
4 range in the Rural Policy Area of Loudoun County is comprised of
5 limestone and “Karst terrain” areas. The limestone geology of
6 carbonate deposits is dissolved over time by mildly acidic
7 precipitation, creating fissures. The deposits are highly permeable,
8 allowing surface water to pass through quickly to underlying aquifers
9 and groundwater, and to reappear elsewhere as springs. The terrain is
10 also characterized by the presence of certain natural features, such as
11 sinkholes and rock outcrops. Thus, development on Karst terrain has a
12 direct correlation to the potential for collapse and ground slippage and
13 the susceptibility of groundwater and surface water pollution, and
14 spring contamination, posing serious risks to public health, safety, and
15 welfare. The provisions of this Section 4-1900 are intended to regulate
16 land use and development in areas underlain by limestone and in areas
17 with Karst features and Karst terrain in such a manner so as to:

18 (A) — Protect groundwater and surface water resources from
19 contamination;

20 (B) — Reduce potential for property damage resulting from
21 subsidence or other earth movement; and

22 (C) — Protect the health, safety, and welfare of the public.

23 **4-1902 — Authority.** Authority for these provisions includes:

24 (A) — Chapter 11, Title 15.2, Code of Virginia (Planning,
25 Subdivision of Land and Zoning).

26 (B) — Soil Conservation Districts Law, Va. Code Sections 21-2(c);
27 21-2(d).

28 (C) — Virginia Environmental Quality Act, Va. Code Section 10-
29 178.

30 (D) — Erosion and Sediment Control Act, Va. Code Section 21-
31 89.2.

32 **4-1903 — Applicability and Exemptions.**

33 (A) — **Applicability Land Area and Features Included in the**
34 **LOD.** This Section 4-1900 shall apply to all land area and
35 karst features included in the Limestone Conglomerate
36 Overlay District (LOD), as shown on the official Limestone
37 Conglomerate Overlay District Map of Loudoun County

1 (“LOD Map”), which with all explanatory matter thereon, is
2 hereby incorporated by reference.

3 (1) ~~The LOD Map delineates the following features:~~

4 (a) ~~The extent of the limestone bedrock~~
5 ~~formations;~~

6 (b) ~~Sinkholes; and~~

7 (c) ~~Rock outcrops.~~

8 (2) ~~The LOD Map does not delineate required buffers~~
9 ~~around karst features. (See Section 4-1905 below.)~~

10 (B) ~~Applicability Covered Activities.~~ This Section shall
11 apply to all proposed land disturbing activities, including
12 non-agricultural rural economy uses, new single family
13 development, and subdivision, that occurs within the LOD.
14 Expansion, alteration, or reconstruction of legally existing
15 buildings, structures, and impervious surface areas existing
16 on January 7, 2003 shall not be covered, provided that such
17 alteration does not increase the total footprint of a structure
18 or impervious surface by more than twenty five percent
19 (25%) or 2,000 square feet, whichever is greater.

20 (C) ~~Exemptions.~~ The following land disturbing activities shall
21 be allowed within the LOD, subject to the specific limits set
22 forth below:
23

24 (1) ~~Agricultural Operations.~~ This section shall not
25 apply to agricultural operations located in the LOD
26 that are covered by a Conservation Farm
27 Management Plan, approved by the Loudoun
28 County Soil and Water Conservation District or the
29 U.S. Natural Resources and Conservation Service
30 that includes best management practices, and a
31 Nutrient Management Plan (where applicable).
32 Structures associated with agricultural operations
33 are not exempt from these provisions.

34 (2) ~~Existing Legal Lots within Sensitive Limestone~~
35 ~~Areas.~~ Following a Geotechnical or Geophysical
36 study, a legal lot of record, which lot was: (a) in
37 existence on January 7, 2003; and (b) contains in
38 whole or in part a sensitive environmental resource
39 associated with limestone bedrock area established
40 by Section 4-1905, below, may be developed for a

1 single-family detached dwelling and permitted
2 accessory structures. To the maximum extent
3 feasible, no development shall take place within
4 karst feature buffers, but where residential
5 development takes place, such dwelling shall be
6 sited on the lot as far from any karst feature as
7 possible, and shall comply with the development
8 standards in this section to the maximum extent
9 feasible. Development on such lot shall not be
10 allowed if subsidence poses a serious risk to public
11 health or safety or to the safety of residents or users
12 of the proposed development, as determined by the
13 County

14 ~~4-1904~~ **Review Procedures.** All development approvals, review procedures,
15 modifications, and density calculations in the LOD are governed by
16 Article VI, "Development Process and Administration," as applicable,
17 and procedures in Chapter 8 of the Facilities Standards Manual (FSM).

18 ~~4-1905~~ **Establishment of Sensitive Limestone Areas.**

19 (A) ~~Sensitive Environmental Resources Associated with~~
20 ~~Limestone Bedrock.~~ For all development applications
21 involving properties subject to LOD as identified on the LOD
22 Map, or by an approved Preliminary Soils Review, the
23 applicant shall submit a Geotechnical or Geophysical Study
24 in accordance with standards set forth in the Facilities
25 Standards Manual, Chapter 6. Such Geotechnical or
26 Geophysical Study shall identify the following sensitive
27 environmental resources associated with limestone bedrock:

- 28 (1) ~~Closed depressions;~~
- 29 (2) ~~Open sinkholes;~~
- 30 (3) ~~Rock outcrops;~~
- 31 (4) ~~Seasonal high water table indicators;~~
- 32 (5) ~~Surface drainage into ground;~~
- 33 (6) ~~Faults;~~
- 34 (7) ~~Other hazardous subsidence conditions;~~
- 35 (8) ~~Underground solution channels; and~~

(9) ~~Other underground features that may affect the proposed development.~~

(10) ~~Cave openings~~

~~If conditions warrant mitigation to protect sensitive environmental resources associated with limestone bedrock, then the study shall propose mitigation measures to be undertaken. Avoidance of sensitive environmental resources associated with limestone bedrock and of karst features shall be the preferred mitigation measure.~~

(B) ~~**Karst Feature Buffers.** For each karst feature identified on the LOD Map or by an approved Preliminary Soils Review, or the required Geotechnical/Geophysical Study, a Karst Feature Buffer shall be established from the outermost edge of the feature. The minimum Karst Feature Buffer width shall be:~~

(1) ~~Fifty (50) feet from any rock outcrop;~~

(2) ~~One hundred (100) feet from the rim of any sinkhole; and~~

(3) ~~One hundred (100) feet from any cave opening.~~

~~4-1906 Permitted Uses and Activities.~~

(A) ~~**Uses and Activities within Karst Feature Buffers.**~~

(1) ~~Land disturbing activities, development, and impervious surface coverage are prohibited within Karst Feature Buffers, except for the following:~~

(a) ~~Fences that do not obstruct surface water flow;~~

(b) ~~Trails and other passive recreation facilities, excluding buildings, for pedestrian, bike or other non-motorized use, provided that such facility is designed with permeable materials and is located a minimum of 25 feet from the edge of a karst feature; and~~

(c) ~~Restoration and revegetation.~~

(2) ~~Residential structures shall be located outside Karst Feature Buffers, unless there are no feasible~~

development sites available outside the buffers. Residential structures located within a Karst feature shall be sited on the lot as far away from the Karst feature to the maximum extent feasible.

~~(B) — Uses and Activities in the Limestone Conglomerate Overlay District, Outside Karst Feature Buffers.~~ All uses and structures permitted by right in the underlying zoning district are permitted within the Limestone Conglomerate Overlay District outside of Karst Feature Buffers, subject to the standards and mitigation measures in this Section and Zoning Ordinance.

~~4-1907 — Special Exception Uses.~~ All uses and structures permitted by special exception in the underlying zoning district may be permitted subject to the procedures and criteria stated in Section 6-1300, "Special Exception," of the Zoning Ordinance, to conditions identified in a grading permit application, when required, and to any mitigation measures required according to Section 4-1909, below

~~4-1908 — Development Standards for the LOD.~~ Unless otherwise exempt by Section 4-1903(C) above, all land disturbing activities permitted by right or special exception in the LOD shall adhere to the following development standards:

~~(A) — Structures in Potential Subsidence Areas.~~ No structure shall be built in an area where a Geotechnical or Geophysical Study indicates that potential subsidence may occur that would cause physical injury or harm to the public or future residents unless such a study indicates that such potential harm can be mitigated.

~~(B) — Site Grading.~~ To the maximum extent feasible, site grading shall maintain natural drainages. If not feasible, then drainage shall be designed to avoid damage to sensitive environmental resources associated with limestone bedrock as identified in the required Geotechnical or Geophysical study.

~~(C) — Surface Water Run-Off.~~

~~(1) — Non point source pollution load of nutrients and sediment shall not exceed the standards specified in Chapter 5 of the Facilities Standards Manual.~~

~~(2) — Surface water run-off shall not be redirected to enter a sinkhole or closed depression. Drainage plans shall be designed to route surface water run-~~

1 off through vegetative filters or other filtration
2 measures before it enters such features, and to
3 protect neighboring properties from runoff on the
4 subject property.

5 (D) ~~Revegetation.~~ Disturbed areas not covered by paving, stone,
6 or other solid materials shall be revegetated with native plant
7 species that are compatible with the natural vegetation and
8 tree cover and that have low water and nutrient requirements.

9 (E) ~~Application of Wastewater Sludge.~~ Application of
10 wastewater sludge shall be subject to the requirements of a
11 nutrient management plan acceptable to the County pursuant
12 to provisions contained in the Loudoun County Codified
13 Ordinances

14 (F) ~~Communal Water and Wells.~~ Wells shall be installed in
15 accordance with the provisions in Chapter 6 (proposed) of the
16 Facilities Standards Manual, relating to "Subdivisions with
17 Communal Water Systems," and "Subdivisions with
18 Individual Wells." In addition to well protection standards in
19 the FSM, structures and septic systems shall be located a
20 minimum distance of 100 feet from all existing and proposed
21 wells, both on and off site.

22 (G) ~~On-Site Sewage Disposal Systems.~~ On-site sewage disposal
23 systems, as currently defined in the Land Subdivision
24 Development Ordinance, are allowed for individual lots and
25 subdivisions with fewer than eight (8) lots in the LOD.
26 Sewage disposal systems shall be subject to the review
27 processes and requirements in the existing LSDO (Section
28 1245.10) and shall comply with requirements of the State of
29 Virginia Department of Health Division of Sewage and
30 Water Services, the Loudoun County Sanitation Authority
31 regulations, the Loudoun County Health Department, and the
32 following:

33 (1) Within the LOD, in areas that the Director of the
34 Loudoun County Health Department deems
35 appropriate for sewage disposal systems, the
36 applicant shall only use a sewage disposal system
37 that is at least 90% effective in removing nitrogens.

38 (2) For existing and new systems, owners shall submit
39 evidence of pumping, inspection, and any necessary
40 repairs and maintenance every three years. The
41 applicant shall submit evidence of current

inspection and maintenance before expansion or conversion of a land use.

(H) ~~Communal Wastewater Systems.~~ Proposed subdivisions containing eight (8) or more lots shall be served by communal wastewater systems, unless the applicant demonstrates to the County that other types of systems are available that will achieve the same or superior treatment results. The County shall allow communal wastewater systems in the LOD subject to the following standards:

(1) ~~Where sufficient buildable land area exists on the portion of a property outside the LOD to accommodate a proposed communal wastewater disposal system, that area shall be used before any land within the LOD shall be used; or~~

(2) ~~Where insufficient buildable land area exists outside of the LOD, as much of the proposed communal wastewater disposal system shall be sited outside the LOD as possible.~~

(3) ~~Where any portion of a proposed communal wastewater disposal system is to be located within the LOD the applicant shall demonstrate through a Geophysical Study acceptable to the County that the communal wastewater disposal system will minimize run-off generated, enhance filtration, and will not have an adverse environmental impact on underlying aquifers and groundwater. In addition, the applicant shall provide a plan for regular operation and maintenance.~~

(I) ~~Protection of Springs.~~ Land disturbing activities, development, and impervious surface coverage are prohibited within one hundred (100) feet from a spring, measured from the vertical source of a spring on flat terrain or from the first emergence of a spring on any steep slope (15% or greater).

(J) ~~Stormwater Management Ponds.~~

(1) ~~To the maximum extent feasible, stormwater management ponds shall not be located within areas containing open sinkholes and closed depressions.~~

(2) ~~Stormwater management ponds constructed within the LOD shall be lined with impervious materials to~~

prevent groundwater pollution, in accordance with Chapter 5 of the Facilities Standards Manual.

(K) — **Warnings to Property Owners.** A note shall be placed on any record subdivision plat for land in the LOD, containing the following, or similar, language: “Household lawn fertilizers, herbicides, and pesticides for residential purposes should be limited due to the underlying geology of this property, and the potential for groundwater contamination. Application of fertilizers and lime is allowed within the Limestone Conglomerate Overlay District but should only be applied based on results of a soil test obtained through the Virginia Tech extension service or other County approved laboratory.

~~4-1909~~ — **Mitigation Measures for the LOD.** In addition to compliance with the development standards in Section 4-1908, land disturbing activities shall employ one or more measures as necessary to mitigate any potential adverse impacts to the County’s subsurface water resources or sensitive environmental resources associated with limestone bedrock, as identified in a preliminary soils review, required Geotechnical or Geophysical Study as set forth in Section 4-1905(A), or other hydrogeologic or environmental analysis,

(A) — **General.** Mitigation measures shall be directly related to the proposed land disturbing activity and its potential adverse impact on karst features or sensitive environmental resources associated with limestone bedrock identified on the subject property.

(B) — **Mitigation Measures.** If warranted by a study required by this Zoning Ordinance, the County shall require measures to mitigate the identified potential adverse impacts, including but not limited to the following:

(1) — **Ineligibility for Density Increases.** The applicant may not be eligible for any density increases permitted under the clustering provisions of this Ordinance.

(2) — **Use of a Cluster Subdivision.** Where not otherwise required by this Ordinance, the County may require cluster development.

(3) — **Landscaping and Reductions in Impervious Surface Coverage.** The County may require:

- 1 (a) ~~Reductions in the maximum impervious~~
2 ~~surface coverage allowed;~~
3 (b) ~~Reductions in the area devoted to~~
4 ~~landscaped lawns, and~~
5 (c) ~~the use of xeriscape (i.e., use of native plant~~
6 ~~materials and landscape materials that have~~
7 ~~lower water and nutrient requirements).~~

8 (4) ~~**Prohibition of Specific Pollution Sources.** The~~
9 ~~County may prohibit specific pollution sources, as~~
10 ~~defined in Chapter 5 of the Facilities Standards~~
11 ~~Manual if the applicant does not propose effective~~
12 ~~mitigation measures acceptable to the County,~~
13 ~~provide evidence that pollution sources will be~~
14 ~~properly monitored, and that they will adhere to~~
15 ~~facility design standards.~~

- 16 (a) ~~The County may prohibit the following~~
17 ~~pollution sources, including, but not limited~~
18 ~~to:~~
19 (i) ~~Uses and activities involving~~
20 ~~hazardous substances;~~
21 (ii) ~~Uses and activities involving the~~
22 ~~application of high-nitrate herbicides~~
23 ~~or pesticides;~~
24 (iii) ~~Automobile service stations;~~
25 (iv) ~~Underground storage tanks;~~
26 (v) ~~Landfills and waste sites; and~~
27 (vi) ~~Other uses and activities with high~~
28 ~~risk of releasing pollutants.~~

29 (5) ~~**Storage Tanks.** The County may require leak~~
30 ~~testing and secondary containment of storage tanks.~~

31 (6) ~~**Conservation of Indigenous Vegetation.** The~~
32 ~~County may require retention of indigenous~~
33 ~~vegetation to the maximum extent feasible, and in~~
34 ~~accordance with Tree Conservation Standards in~~
35 ~~Chapter 7 of the Facilities Standards Manual.~~

36 (7) ~~**Groundwater Monitoring.** The County may~~
37 ~~require the applicant to establish a regular system of~~
38 ~~groundwater monitoring by a qualified professional~~
39 ~~for the proposed development.~~

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~~(8) — **Explosives and Blasting.** The County may require the following blasting mitigation measures:~~

- ~~(a) — A blasting plan for approval that contains blasting procedures;~~
- ~~(b) — A pre-blasting site inspection to determine base line conditions;~~
- ~~(c) — Monitoring of initial blasts by appropriate seismic and noise measurements at sensitive locations identified in the blasting plan;~~
- ~~(d) — Post-blasting inspections; and~~
- ~~(e) — Restrictions on blasting and explosives, or limits on blasting to specific times and atmospheric conditions to minimize impact.~~

~~(9) — **Silviculture.** Silviculture may be conducted only in conformance with a Forest Management Plan that is consistent with requirements in the Facilities Standards Manual and approved by both the Virginia Division of Forestry and the County. Silviculture does not include commercial planting or clear-cutting of a forest.~~

~~(10) — **Nutrient Management Plan.** The County may require a Nutrient Management Plan to be completed according to guidelines established by the Virginia Department of Conservation and Recreation. All nutrient management plans required by this section shall be subject to County approval.~~

~~(11) — **Conservation Easements.** Conservation easements that permanently conserve sensitive limestone area may be dedicated to the County with its written consent and/or to a third party approved by the County.~~

1 **Section 4-2000 — River and Stream Corridor Overlay District (RSCOD)**

2
3 **4-2001 Purpose and Intent.** These provisions are intended to promote, preserve, and
4 enhance the important hydrologic, biological, ecological, aesthetic, recreational,
5 and educational functions that river and stream corridors provide. Specifically,
6 the provisions are intended to:

7 (A) — Protect life and prevent or minimize property damage from soil erosion
8 and flooding; and reduce public costs for flood control, rescue, and relief
9 efforts occasioned by unwise use or occupancy of floodplains;

10 (B) — Comply with federal and state laws and regulations that address the need
11 for floodplain management and protection;

12 (C) — Qualify Loudoun County residents for the insurance and subsidies
13 provided by the National Flood Insurance Program;

14 (D) — Conserve the natural state of watercourses and stream banks to enable a
15 dynamic and healthy river and stream corridor ecosystem;

16 (E) — Maintain water quality and minimize or remove pollutants delivered in
17 stormwater through the natural capacity of riparian areas to filter and
18 purify run-off;

19 (F) — Protect against the damages of soil erosion and flooding;

20 (G) — Reduce water treatment cost;

21 (H) — Maintain and provide a riparian canopy to shade streams and promote
22 desirable aquatic organisms and fish habitats;

23 (I) — Conserve wildlife habitat and corridors;

24 (J) — Perpetuate biological diversity and natural resource management to
25 provide educational and recreational value;

26 (K) — Protect and preserve functioning forest cover and riparian forest buffers
27 for their biological and hydrological benefits;

28 (L) — Protect wetlands;

29 (M) — Preserve and protect Loudoun County's historic and prehistoric heritage in
30 the form of archeological sites; and

31 (N) — Protect the scenic value of the rivers and streams of Loudoun County.

32
33 **4-2002 Authority.** Authority for these provisions includes:

- (A) ~~Flood Damage Reduction Act, Va. Code Sections 62.1-44.108 et seq.~~
- (B) ~~Chapter 11, Title 15.2, Code of Virginia (Planning, Subdivision of Land and Zoning).~~
- (C) ~~Soil Conservation Districts Law, Va. Code Sections 21-2(c), 21-2(d).~~
- (D) ~~Virginia Environmental Quality Act, Va. Code Section 10-178.~~
- (E) ~~Erosion and Sediment Control Act, Va. Code Section 21-89.2.~~
- (F) ~~Potomac River Basin Compact, Va. Code Section 62.1-69.1.~~
- (G) ~~National Flood Insurance Act of 1968, 42 U.S.C. 4001 et seq.~~
- (H) ~~Section 10.1-2100 et seq. (The Chesapeake Bay Preservation Act) and Section 15.1-489, of the Code of Virginia.~~

~~4-2003 Applicability and Exemptions.~~

(A) ~~**Applicability—Land Area & Features Included in the RSCOD.** This Section 4-2000 shall apply to all land areas and natural features within the River and Stream Corridor Overlay District (RSCOD), as shown on the official River and Stream Corridor Overlay District Map of Loudoun County (“RSCOD Map”), which with all explanatory matter thereon, is hereby incorporated by reference. The description of the Protected River and Stream Corridors (“Protected Corridors”) in RSCOD is set forth in Section 4-2005, “Establishment of Protected Corridors.” (*Note: Map sources are listed on RSCOD Map.*)~~

(B) ~~**Applicability—Covered Activities.** This Section 4-2000 shall apply to all proposed land disturbing activity, including new single-family development and subdivision that occurs within the RSCOD Protected River and Stream Corridors (“Protected Corridors”). This Section shall not apply to the expansion, alteration, or reconstruction of legally existing buildings, structures, and impervious surface areas existing on January 7, 2003, provided that such alteration does not increase the total footprint of a structure or impervious surface by more than twenty-five percent (25%) or 2000 square feet whichever is greater.~~

(C) ~~**Exemptions.** The following land disturbing activities are exempt from this Section 4-2000’s requirements, subject to the specific limits set forth below:~~

(1) ~~**Agricultural Operations.** This section shall not apply to agricultural operations located in the Protected Corridor that are covered by a Conservation Farm Management Plan, approved by the Loudoun County Soil and Water Conservation District or the~~

U.S. Natural Resources and Conservation Service that includes best management practices. Structures associated with agricultural operations are not exempt from these provisions.

(2) ~~Existing Legal Lots within the Protected Corridor.~~ A legal lot of record (a) in existence on January 7, 2003; and (b) located in whole or in part within the Protected Corridor, may be developed for a single family detached dwelling use and accessory structures, provided such dwellings and structures are located outside of the 100 year floodplain. This exemption shall not apply to non-residential uses. Such dwelling and accessory structures shall be sited on the lot as far from the stream bank as feasible.

(3) ~~Man-Made Drainage Channels, Ditches, and Similar Structures.~~ Standards set forth in Section 4-2005, "Establishment of Protected Corridors," shall not apply to man-made drainage channels, ditches, and similar structures. However, all other relevant development standards set forth in Section 4-2008 shall apply.

(D) ~~Zone District Development and Dimensional Standard Flexibility Provisions.~~ When twenty five percent (25%) or more of the total area of a parcel or lot is subject to RSCOD restrictions (excluding any management buffer), the following modifications of development and dimensional standards shall be applicable for the purposes of accommodating the density/intensity of development allowed in the underlying zoning district, unless the underlying zoning requires less restrictive standards:

(1) ~~Minimum Lot Size:~~ No minimum.

(2) ~~Minimum Lot Width:~~ No minimum.

(3) ~~Minimum Yards:~~

(a) ~~Residential:~~ No minimum

(b) ~~Nonresidential:~~

(i) ~~Front:~~ 15 feet

(ii) ~~Side:~~ 9 feet

(iii) ~~Rear:~~ 15 feet

(4) ~~Height:~~ 45 feet (residential); 55 feet, without additional setbacks being required (nonresidential)

1 (5) ~~Parking (nonresidential only).~~ Twenty five percent (25%)
2 reduction in the required off-street parking space requirement as
3 set forth in Section 5-1002.

4 (6) ~~Buffering and Screening.~~ To the extent necessary to
5 accommodate the density/intensity of development allowed in the
6 underlying zoning district, the Zoning Administrator may waive or
7 reduce the buffer yard requirements set forth in Section 5-1400
8 upon a showing that the building and/or yard has been designed to
9 minimize adverse impact through a combination of architectural,
10 landscape, and/or other design techniques.

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12
13 ~~4-2004 Review Procedures.~~ All development approvals, review procedures,
14 modifications, and density calculations in the RSCOD are governed by Article VI,
15 “Development Process and Administration,” as applicable, and procedures in
16 Chapter 8 of the Facilities Standards Manual.

17 ~~4-2005 Establishment of Protected Corridors.~~

18 (A) ~~General Rule Protected Corridors along Streams and Rivers.~~

19 (1) ~~Minimum Protected Corridor Width.~~ Except for those waters
20 listed under section 4-2005(B)(1) below, for all stream and river
21 segments draining 100 acres or more and shown on the RSCOD
22 Map, the Protected Corridor shall be the greater of (1)(a) or (1)(b)
23 below:

24 (a) ~~The cumulative width of the following:~~

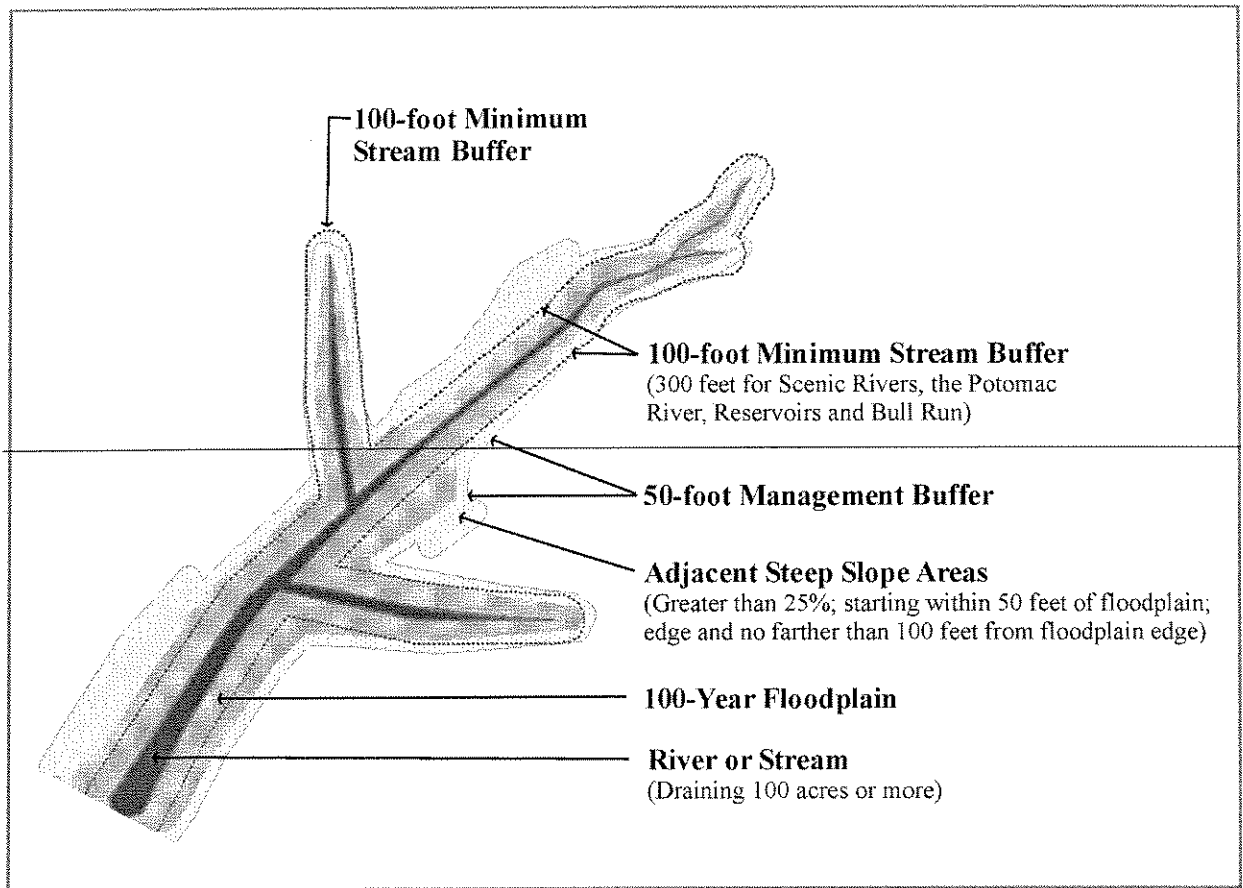
25 (i) ~~The 100-year floodplain, and~~

26 (ii) ~~Adjacent very steep slopes (greater than 25%)~~
27 ~~starting within 50 feet of the edge of the 100-year~~
28 ~~floodplain and extending no greater than 100~~
29 ~~horizontal feet beyond the edge of the 100-year~~
30 ~~floodplain, and~~

31 (iii) ~~A 50-foot Management Buffer measured from the~~
32 ~~edge of the 100-year floodplain in (a)(i) above or~~
33 ~~when adjacent very steep slopes are present, from~~
34 ~~the very steep slope areas in (a)(ii) above.~~

35 OR

36 (b) ~~A minimum stream buffer measured as the area located~~
37 ~~within 100 feet of both sides of the stream or river;~~
38 ~~measured as a line extending perpendicularly from the~~
39 ~~stream bank of the active channel of the stream or river.~~



Protected River and Stream Corridor ("Protected Corridor") Diagram

(B) Protected Corridors Along Specific Rivers/Streams and Water Supply Reservoirs

(1) **Minimum Protected Corridor Width.** For the following specific rivers and streams and water supply reservoirs, the Protected Corridor shall be the greater of the Protected Corridor width required by Subsection 4-2005(A), "General Rule Protected Corridors along Streams and Rivers," above, or the area located within three-hundred (300) feet from:

- (a) The defined stream bank of the Potomac River;
- (b) The defined stream bank of Bull Run;
- (c) The stream bank of the active channel for any state scenic rivers, including but not limited to Goose Creek, Catoctin Creek; and
- (d) The projected shoreline of any drinking water supply reservoir, as denoted on the RSCOD map.

1 **4-2006 Permitted Uses and Activities.**

2 ~~(A) **General.** Only those uses and activities set forth in this subsection shall~~
3 ~~be permitted by right or special exception within a Protected Corridor, and~~
4 ~~land so encumbered may be used in a manner permitted in the underlying~~
5 ~~district only if and to the extent such use is also permitted in the overlay~~
6 ~~district.~~

7 ~~(B) **Permitted Uses.** The following uses shall be permitted in a Protected~~
8 ~~Corridor, subject to development standards in this section:~~

9 ~~(1) Roads, railroad tracks, bridges, paths and trails, and below ground~~
10 ~~utilities when any such facilities cross a stream or river;~~

11 ~~(2) Paths and trails, including footpaths, bicycling or hiking paths, and~~
12 ~~horse trails constructed of permeable materials;~~

13 ~~(3) Stormwater management facilities that do not alter a river or~~
14 ~~stream channel;~~

15 ~~(4) Sanitary sewer pipelines;~~

16 ~~(5) Lakes, ponds, and water supply reservoirs;~~

17 ~~(6) Historic sites, structures, archaeological sites, and~~
18 ~~restoration/recovery activities;~~

19 ~~(7) Passive recreation, limited to hiking, non-motorized biking,~~
20 ~~horseback riding, picnicking, camping, climbing, hunting, fishing,~~
21 ~~and wildlife viewing;~~

22 ~~(8) Active recreation on the waters only, limited to swimming and~~
23 ~~non-powered boating with public points of entry identified and~~
24 ~~approved by the County;~~

25 ~~(9) Silviculture, as defined in the Zoning Ordinance;~~

26 ~~(10) Wildlife and fisheries management projects that are consistent with~~
27 ~~the purposes of the Federal Endangered Species Act or consistent~~
28 ~~with the regulations, policies, and habitat programs of the~~
29 ~~Commonwealth of Virginia;~~

30 ~~(11) Conservation and educational activities, including but not limited~~
31 ~~to Adopt a Stream and Keep Loudoun Beautiful programs,~~
32 ~~teaching visits, and scientific study of nature, historic sites, and~~
33 ~~archaeological sites;~~

34 ~~(12) Stream and riparian restoration projects;~~

(13) ~~Wetlands mitigation banking; and~~

(14) ~~Water quality monitoring and stream gauging.~~

4-2007 Special Exception Uses.

(A) ~~General.~~ The following uses may be permitted in a Protected Corridor by special exception, subject to the procedures and criteria stated in Section 4-2008, "Development Standards," and Section 6-1300, "Special Exception:"

(1) ~~Marinas or boat launches for non-powered boats, boat rental entry points, docks and piers; and~~

(2) ~~Above ground structures or uses required for the operation of a public utility, such as intake and outfall structures of power plants, sewage treatment plants, water treatment plants, and substations.~~

(B) ~~Additional Criteria for a Special Exception Use.~~ In considering applications for a special exception, the Board of Supervisors shall find that the following standards, in addition to those of Section 6-1300, "Special Exception," have been met:

(1) ~~The proposed use will not increase the danger to life and property due to increased flood heights or velocities.~~

(2) ~~The proposed use will not increase the danger that materials may be swept downstream to the injury of others.~~

(3) ~~The proposed water supply and sanitation systems are designed to prevent disease, contamination, and unsanitary conditions.~~

(4) ~~The proposed use or structure must be located and designed to limit its susceptibility to flood damage, and alternative locations that are not subject to flooding must be considered.~~

(5) ~~The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site shall not cause significant damage, nor increase erosion downstream due to increased flood heights or velocities.~~

(6) ~~The proposed use will not adversely affect water quality or impair the function or chemical, physical, biological, and ecological integrity of the stream or river corridor.~~

4-2008 Development Standards. All development and land disturbing activities permitted by right or special exception in the RSCOD Protected Corridor shall adhere to the following development standards:

1 (A) ~~General.~~ To the maximum extent feasible, all uses and activities shall
2 minimize land disturbance in the Protected Corridor.

3 (1) ~~Preferred Development Sites.~~ Preferred development sites for
4 permitted uses and activities set forth in Section 4-2006 and special
5 exception uses set forth in Section 4-2007 are those that:

6 (a) ~~Avoid all parts of the Protected Corridor except to the~~
7 ~~extent that the Management Buffer is reduced or eliminated~~
8 ~~pursuant to Section 4-2009, "Permitted Reductions in~~
9 ~~Protected Corridor Width;"~~

10 (b) ~~Do not impair, interrupt, or fragment the functioning of the~~
11 ~~river and stream ecology; and protect the safety of residents~~
12 ~~and their property.~~

13 (2) ~~Restoration/Mitigation of Disturbance.~~

14 (a) ~~Disturbance During Development.~~ All areas
15 ~~disturbed during development in the Protected~~
16 ~~Corridor shall be restored to preexisting conditions~~
17 ~~by the applicant to the maximum extent feasible.~~
18 ~~Where restoration will not be feasible, then the~~
19 ~~applicant shall mitigate any disturbance of the~~
20 ~~Protected Corridor that exceeds 10,000 square feet~~
21 ~~in area by providing mitigation in other areas in the~~
22 ~~Protected in the form of:~~

23 (i) ~~Providing riparian buffer pursuant to~~
24 ~~Chapter 7 of the FSM, either on the~~
25 ~~development site or off site; or~~

26 (ii) ~~Enhanced BMPs pursuant to Chapter 5 of~~
27 ~~the FSM, either on the development site or~~
28 ~~off site; or~~

29 (iii) ~~Stabilization of off-site stream banks; or~~

30 (iv) ~~Off site vegetation restoration of erosion~~
31 ~~that is affecting water quality; or~~

32 (v) ~~Establishment of a restoration area equal in~~
33 ~~quality and quantity of the area encroaching~~
34 ~~into the 50-foot management buffer~~
35 ~~elsewhere on the lot or parcel in a way that~~
36 ~~maximizes the purpose and intent of the~~
37 ~~protected corridor.~~
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1 All mitigation areas shall be located in the general
2 vicinity of the disturbed area (e.g., within the
3 immediate drainage area) and shall be similar in
4 size and quality as the disturbed area prior to
5 development activity.
6

7
8 (b) ~~Pre-existing Conditions.~~ On-site stream bank stabilization
9 and vegetation restoration shall be required if a site shows
10 evidence of pre-existing erosion that is affecting water
11 quality and/or stream banks that are unstable. Restoration
12 shall be performed in accordance with Chapter 7 of the
13 Facilities Standards Manual.

14
15 (B) ~~Alterations to the 100-Year Floodplain.~~ No alterations shall occur in the
16 100-year floodplain to create additional buildable land by elevating land or
17 relocating or altering a natural stream channel, except as specifically
18 allowed as either a permitted or special exception use. Where alterations
19 are permitted, they shall be pursuant to the provisions in this Section 4-
20 2000, and the following criteria:

21
22 (1) ~~Alterations to the floodplain shall result in no off-site increase in~~
23 ~~the water surface elevation of the base flood. Alterations in the~~
24 ~~floodway shall result in no rise in the water surface elevation of the~~
25 ~~base floodplain consisting of the water channel and overbank areas~~
26 ~~capable of conveying the deep and fast moving water discharge of~~
27 ~~the base flood as defined in the Federal Emergency Management~~
28 ~~Agency Flood Insurance Study.~~

29
30 (2) ~~Alterations to the floodplain shall not create erosive water velocity~~
31 ~~on or off-site (where erosive water velocity is based on analysis of~~
32 ~~the surface material and permissible velocities for specific cross~~
33 ~~sections affected by the proposed alteration, using standard~~
34 ~~engineering tables as a general guide), and the mean velocity of~~
35 ~~stream flow at the downstream end of the site after alteration shall~~
36 ~~be no greater than the mean velocity of the stream flow under~~
~~existing conditions.~~

37
38 (3) ~~The applicant shall provide plans for any alteration to the 100-year~~
39 ~~floodplain. The floodplain alteration plan shall further include~~
40 ~~plans for erosion control of cut and fill slopes and restoration of~~
41 ~~excavated areas. The site plan shall incorporate the use of natural~~
42 ~~materials (earth, stone, wood) on cut and fill slopes and provide for~~
~~tree protection.~~

- 1 (4) ~~The flood carrying capacity within the altered floodplain shall be~~
2 ~~maintained.~~
- 3 (5) ~~Alterations to the floodplain shall be in conformance with the~~
4 ~~provisions of Chapter 1220 of the Codified Ordinances of Loudoun~~
5 ~~County and the Erosion and Sediment Control Law, Va. Code~~
6 ~~Section 21-89.1 et seq.~~
- 7 (C) ~~**Vehicular, Pedestrian, and Utility Crossings.** Where permitted, road,~~
8 ~~driveway, railroad track, path and trail, and utility crossings of streams and~~
9 ~~rivers shall be subject to Chapter 5 of the Facilities Standards Manual and~~
10 ~~the following conditions:~~
- 11 (1) ~~The proposed activity shall be supported by an analysis conducted~~
12 ~~by a qualified and licensed professional engineer (P.E.) or Class B~~
13 ~~surveyor (L.S.) that establishes that:~~
- 14 (a) ~~No available, economically feasible alternative exists to~~
15 ~~locating within the Protected Corridor or to crossing the~~
16 ~~river or stream; and~~
- 17 (b) ~~The crossing is designed to avoid or mitigate environmental~~
18 ~~damage to the Protected Corridor and disturbance of the~~
19 ~~aquatic environment, alteration of the waterway,~~
20 ~~downstream migration of sediment, damage to bank~~
21 ~~stability, and damage to stream or river bank and riparian~~
22 ~~area vegetation.~~
- 23 (2) ~~The applicant shall mitigate any disturbance of the Protected~~
24 ~~Corridor by grading and planting to enhance the biological and~~
25 ~~hydrologic processes. Provisions for reclamation of the disturbed~~
26 ~~area shall be approved by the County and included in any~~
27 ~~development or subdivision agreement for the project, with~~
28 ~~adequate security to guarantee that the reclamation will be~~
29 ~~completed.~~
- 30 (3) ~~Any stream or river crossing shall minimize the length of the~~
31 ~~crossing and minimize clearing and other land disturbance.~~
- 32 (4) ~~Utility crossings shall be combined with road, railroad track, and~~
33 ~~driveway crossings when feasible. Crossings in a subdivision shall~~
34 ~~be spaced with a minimum separation of one thousand (1,000) feet~~
35 ~~unless closer spacing will reduce adverse environmental impacts.~~
- 36 (5) ~~Rights-of-way shall be the minimum width necessary for~~
37 ~~installation, access, and maintenance.~~

(6) ~~The County shall allow construction of low water crossings intended for use only by pedestrians, equestrians, or bicyclists, but not for crossings designated for automobiles or other vehicles, except as specified in the Facilities Standards Manual.~~

(7) ~~Vehicular crossings shall be designed to allow wildlife to pass over or under the crossings.~~

(D) ~~**Stormwater Management.** Stormwater management structures, practices, and activities permitted in the Protected Corridor, shall be subject to development standards in Chapter 5 of the Facilities Standards Manual, and shall adhere to the Virginia Stormwater Management Handbook and the Virginia Erosion and Sediment Control Handbook.~~

(E) ~~**Lakes, Ponds, and Reservoirs.** Lakes, ponds, and reservoirs shall be designed using best management practices and with measures to mitigate the following potential adverse environmental impacts:~~

(1) ~~Wetland loss;~~

(2) ~~Forest habitat loss;~~

(3) ~~Barriers to fish migration;~~

(4) ~~Groundwater contamination;~~

(5) ~~Downstream warming;~~

(6) ~~Downstream water quality during dry weather;~~

(7) ~~Potential interruption of downstream bedload movement;~~

(8) ~~Damage to historic and cultural resources and archaeological sites;
and~~

(9) ~~Water quality of the pond or lake effluent.~~

(F) ~~**Recreation Facilities.** Recreation facilities shall be subject to the following standards:~~

(1) ~~Access to waterways shall be limited to specific points of entry as approved by the County.~~

(2) ~~Facilities shall be located on previously disturbed areas to the maximum extent feasible.~~

(3) ~~Facilities shall be designed to minimize disturbance to the biological and hydrologic processes in the Protected Corridor.~~

(4) ~~All paths and trails shall be constructed of permeable materials (e.g., permeable soft or pervious hardstand materials, including but not limited to pervious bitumen or concrete).~~

(G) ~~**Silviculture.** Silviculture shall be subject to best management practice measures and shall be conducted only in accordance with an approved Forest Management Plan that is approved by both the Virginia Division of Forestry and the County. Silviculture does not include commercial harvesting or clear cutting of a forest.~~

(H) ~~**Tree and Vegetation Conservation.** Natural vegetation in the Protected Corridor shall be preserved in accordance with Chapter 7 of the Facilities Standards Manual. Existing healthy trees and vegetation within the Protected Corridor shall be supplemented with additional native planting and landscaping approved by the County where necessary. This provision shall not prohibit removal of dead trees/vegetation that present a danger to public safety, noxious weeds, non native trees/vegetation that threaten native species growth or reintroduction, or any other tree/vegetation that is a threat to the public health or safety.~~

~~**4-2009 Permitted Reductions in Protected Corridor Width.** Where the Protected Corridor on a specific property includes a 50-foot Management Buffer as established by Section 4-2005(A)(1)(a) above, the County Zoning Administrator, upon the recommendation of the County Engineer, may approve a reduction of or elimination of the 50-foot Management Buffer in the following circumstances:~~

(A) ~~**Demonstration of No Adverse Impact.** If the applicant can demonstrate that the existing floodplain is of sufficient size and quality so as to protect water quality and meet other purposes set forth in Section 4-2001 and that reduction of the Management Buffer will not adversely impact other RSCOD elements, or~~

(B) ~~**Economic Use of Property.** If the area of the property to be developed that is outside the Protected Corridor, including the 50-foot Management Buffer, is insufficient to accommodate the density or intensity of development allowed in the underlying zoning district, provided that:~~

(1) ~~The applicant shall mitigate any adverse environmental impacts the reduction or elimination may have on primary conservation areas located on or off-site as identified through the conservation design process in Section 6-2000, if applicable.~~

(2) ~~Any reduction shall be the minimum necessary to achieve a reasonable buildable area for a principal structure and necessary utilities.~~